

2001 Progress Report



April 2002

Wetlands Restoration Program
Executive Office of Environmental Affairs



*Jane M. Swift, Governor
Bob Durand, Secretary
Christy Foote-Smith, Director*

GROWetlands Report 2001

The Massachusetts Wetlands Restoration Program is pleased to present this progress report of wetlands restoration implemented in 2001 through the GROWetlands Initiative.*

**Groups Restoring Our Wetlands*



Massachusetts Wetlands Restoration Program

Executive Office of Environmental Affairs

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April 2002

Dear Friends of Wetlands:

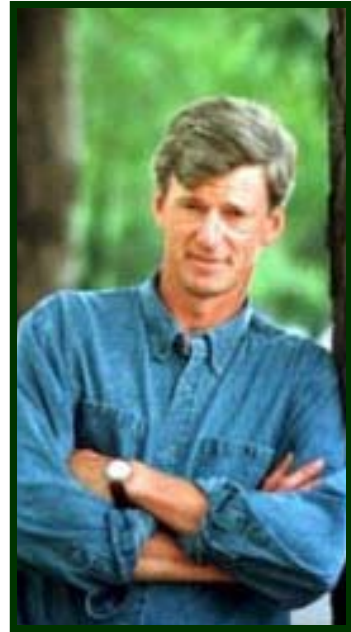
I am pleased to present this **2001 Progress Report** for the Massachusetts Wetlands Restoration Program. Massachusetts has lost more than 28% of its pre-colonial wetlands acreage and much of the remaining 600,000 acres has been degraded by human activities. While we continue to hold the line on further wetlands losses through strong permit programs, this does not address historic wetland losses and degradation.

Wetlands restoration is the keystone of our strategy to implement the Commonwealth's policy of "*no net loss of wetlands in the short term, and a net gain in the long term.*" Since 1994, the Wetlands Restoration Program (MWRP) has been working to restore our wetland heritage. This national award-winning program has supported 27 projects that have restored 339 acres of coastal and freshwater wetlands. Restored wetlands provide essential habitat for a diversity of fish, wildlife, and plant species. They also provide important flood storage, storm damage control, and water quality benefits.

This report summarizes the achievements of the program over the past eight years and describes in detail the fine work that has been accomplished in 2001. It is important to note the essential role of the many partners that collaborate with MWRP, including state and federal agencies, municipalities, academia, non-profits, and the business community. I particularly want to thank the federal agencies coastal America Partnership and the companies that have contributed to the Massachusetts Corporate Wetlands Restoration Partnership.

Thank you for your continued support for wetlands restoration in Massachusetts.

Bob Durand
Secretary of Environmental Affairs
Commonwealth of Massachusetts



What's In This Report?

	Page
• Acknowledgements	1
• Background	2
• Summary of Accomplishments 1994-2001	3
• Wetland Restoration Projects Completed 2001	4
• GROWetlands Projects Accepted	5
• GROWetlands Grants Awarded	9
• Project Investigations Conducted	10
• Coastal Restoration Plans Completed	10
• Coastal Atlases Completed	11
• Watershed Planning Activities	11
• Purple Loosestrife Biocontrol Pilot Project	13
• Corporate Wetlands Restoration Partnership	15
• Research Symposium	18
• Outreach Activities	19

Please also see separate PDF document entitled ***"Summary of Massachusetts Wetland Restoration Projects Completed in 2001"*** available at www.mass.gov/envir/mwrp. The Summary includes descriptions of the following projects:

- ***Barneyville Marsh, Swansea***
- ***Fisherman's Bend, Winthrop***
- ***Hall's Pond, Brookline***
- ***Hammett's Cove, Marion***
- ***Little Neck Road Marsh, Ipswich***
- ***Meadow Brook Marsh, Arlington***
- ***Sagamore Marsh, Bourne/Sandwich***

Acknowledgements



MWRP extends its sincere gratitude to the federal Coastal America and non-profit partners that comprise the Partnership To Restore Massachusetts Wetlands. The achievements documented in this report are the result of their collective and collaborative actions.

- ✦ Environmental Protection Agency
- ✦ National Marine Fisheries Service
- ✦ Natural Resources Conservation Service
- ✦ US Army Corps of Engineers
- ✦ US Fish & Wildlife Service
- ✦ US Department of Transportation
- ✦ Massachusetts Audubon Society
- ✦ Massachusetts Association of Conservation Commissions
- ✦ Ducks Unlimited
- ✦ Executive Office of Environmental Affairs
- ✦ Massachusetts Coastal Zone Management
- ✦ Executive Office of Transportation & Construction

Thank You!!

Background

Massachusetts has lost more than 28% of its wetlands since colonial times and much of the remaining acreage has been degraded by runoff and other impacts. Scientists have documented the crucial importance of wetlands for clean water, flood control, stream flow, fish and wildlife habitat, and groundwater supply. Although a strong wetlands permit program has nearly eliminated new wetland losses, site-by-site permit reviews cannot address the historic loss and much of the ongoing degradation of wetlands.

Secretary Bob Durand of the Executive Office of Environmental Affairs (EOEA) believes we can, and must, address this problem. The Massachusetts Wetlands Restoration Program (MWRP) was established in EOEA in 1994 to further implement the state's policy of "no net loss of wetlands in the short-term and a net gain in the long-term". Wetland restoration is a critical component of the Secretary's Community Preservation and Biological Diversity Initiative and of the Massachusetts Watershed Initiative.

Proactive wetland restoration is "*the act, process or result of returning a wetland or a former wetland to a close approximation of its condition prior to disturbance.*" Unlike wetland replication (mitigation) required under permits to compensate for unavoidable impacts caused by construction and other activities, MWRP "proactive" restoration projects are initiated on a voluntary basis by project sponsors who simply want to bring back our wetland heritage. EOEA's goal is to restore 3,000 acres of wetlands statewide by 2010.

MWRP established the **GROWetlands Initiative** specifically to support locally-initiated wetland restoration projects – hence the name "Groups Restoring Our Wetlands", or "GROWetlands". Through GROWetlands, MWRP, along with its many restoration partners, assists project sponsors. Any individual, non-profit organization, company, or agency can sponsor a wetland restoration project.

In 1994 EOEA and the federal agencies of the Coastal America Partnership signed a *Resolution to Restore Massachusetts Wetlands* stating their commitment to a collaborative approach to restoring the Commonwealth's wetlands through the Partnership To Restore Massachusetts Wetlands. Under this agreement, GROWetlands projects accepted by MWRP are considered Coastal America projects by the federal partners and automatically receive priority consideration under a number of federal funding and technical assistance programs. The signatories to the *Resolution* formed a Coordinating Committee to oversee the implementation of the *Resolution*. The Coordinating Committee has been expanded to include representatives from environmental non-profit organizations that support proactive restoration efforts.

Accomplishments 1994 – 2001

Wetlands Restored

	<i>Coastal</i>	<i>Inland</i>	<i>Total</i>
Projects Completed	17	6	23
Acres Restored	288	51	339

GROWetlands Agreements Signed

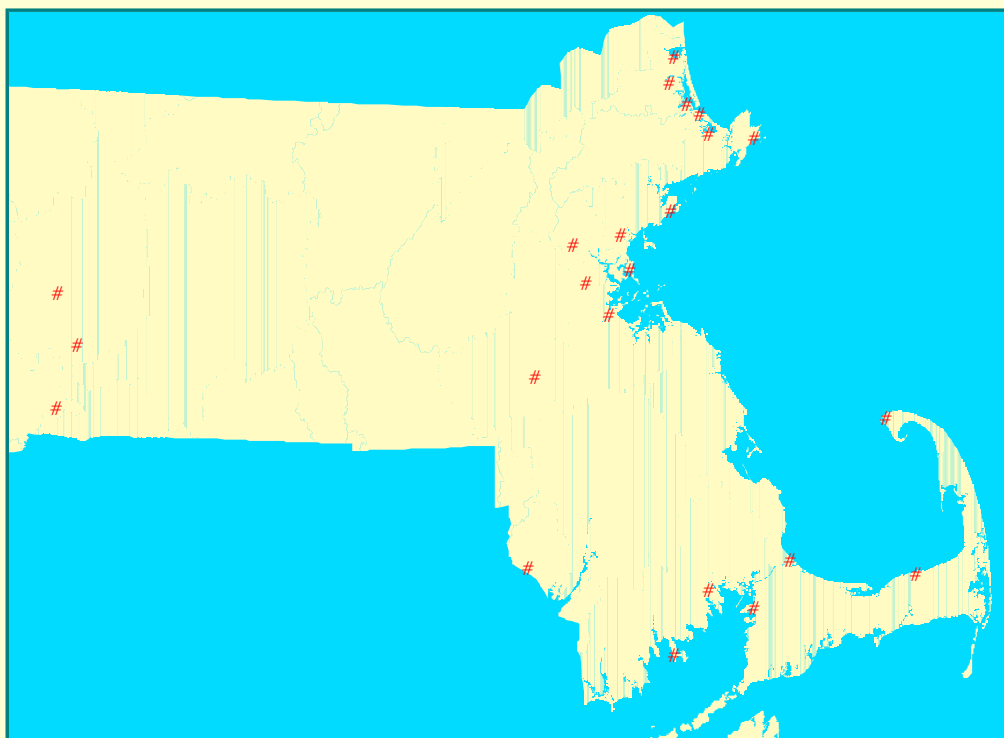
	<i>Through 2000</i>	<i>2001</i>	<i>Total</i>
	35	12	47

GROWetlands Grants Awarded 1999 – 2001

Number of Projects Supported	9
Amount Awarded	\$158,609

Corporate Wetlands Restoration Partnership

	<i>Through 2000</i>	<i>2001</i>	<i>Total</i>
Corporate Partners Recruited	19	6	25
Value of Contributions	\$633,980	\$198,724	\$832,704



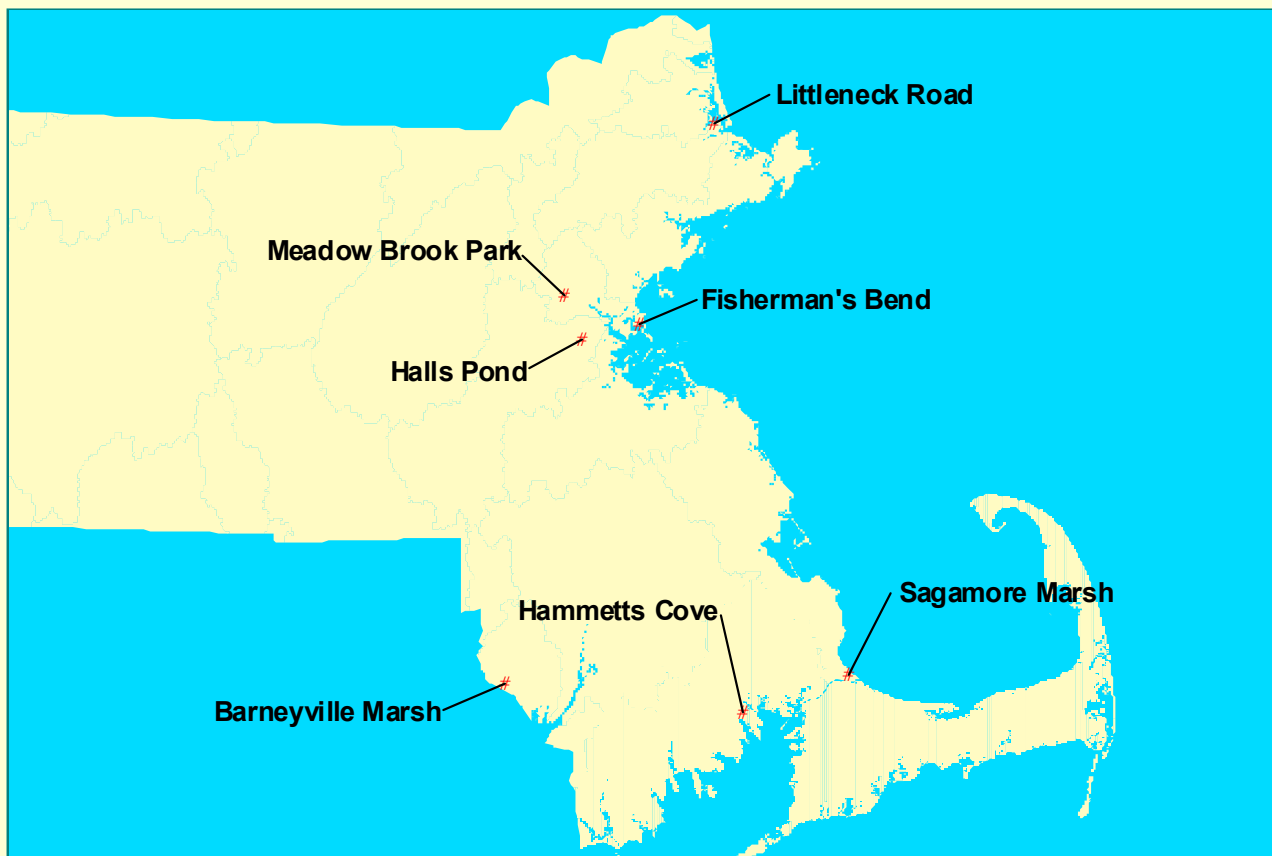
**Wetland Restoration Projects Completed in Massachusetts
1994 – 2001**

Wetland Restoration Projects Completed 2001

For detailed descriptions of the following projects, please see separate PDF document titled "Summary of Massachusetts Wetland Restoration Projects Completed in 2001" available on the MWRP website at www.mass.gov/envir/mwrp.

Site Name	Town	Acres	Coastal/Inland
Littleneck Road	Ipswich	6	Coastal
Fisherman's Bend	Winthrop	8	Coastal
Meadow Brook Park	Arlington	2	Inland
Hall's Pond	Brookline	1	Inland
Hammett's Cove	Marion	6	Coastal
Barneyville Marsh	Swansea	20	Coastal
Sagamore Marsh	Bourne/ Sandwich	50	Coastal

Total Acres Restored 2001: 93



Wetland Restoration Projects Completed in Massachusetts in 2001

GROWetlands Projects Accepted in 2001

MWRP established the GROWetlands Initiative as a collaborative effort to support locally sponsored wetland restoration projects. Conservation commissions, local public works departments, land trusts, private landowners, conservation districts, watershed associations, environmental and civic groups, private businesses, and state and federal agencies are among those contributing to this effort.

Through GROWetlands, MWRP, along with its many restoration partners, assists project sponsors. Any individual, non-profit organization, company, or agency can sponsor a wetland restoration project. MWRP has published a "Citizens' Guide to Restoring Massachusetts Wetlands" to assist grassroots restoration efforts.

Projects may be nominated for acceptance into the GROWetlands Initiative with a simple form available on the MWRP website (www.mass.gov/envir/mwrp). GROWetlands projects accepted by MWRP are considered Coastal America projects by our federal partners and automatically receive priority consideration under a number of federal funding and technical assistance programs. GROWetlands projects also may be eligible to receive grants under MWRP's annual, competitive GROWetlands Grant Program, from the Massachusetts Corporate Wetland Restoration Partnership, and from other state grant programs.

The following projects were accepted by MWRP for GROWetlands in 2001.

Mattapoisett Neck, Mattapoisett

Sponsor: Mattapoisett Conservation Commission

Project Description: An undersized culvert in an abandoned road seaward of Mattapoisett Neck Road restricts full tidal flows from entering the upgradient salt marsh. This project consists of removing the restriction and additional portions of the abandoned road to restore more regular tidal flows to approximately 40-plus acres of the salt marsh.

Funding Needs: **Daylor Consulting Group, Inc.** will donate engineering design and permitting services through CWRP. Additional funds (likely less than \$25,000) may be necessary for project construction.

Willows Marsh, Quincy

Sponsor: Hough's Neck Seacoast and Salt Marsh Group

Project Description: A culvert that has been bricked in prevents tidal flows from entering the Willows Marsh, a former salt marsh that is now mostly overgrown with common reed. This project consists of trying to restore tidal flows to the 3.5-acre marsh while protecting adjacent low-lying properties.

Funding Needs: This project is one of several in Quincy that MWRP plans to work on after first tackling Quincy's Mallard Road salt marsh restoration project. No sources of funding or services have been identified for the Willows Marsh project.

✿ Mallard Road Marsh, Quincy

Sponsor: Hough's Neck Seacoast and Salt Marsh Group

Project Description: This project may include the replacement of an undersized culvert and the removal of fill from areas of salt marsh in the vicinity of Mallard Road. The first phase of this project includes an investigation of whether the culvert in Mallard Road does, in fact, restrict tidal flows from the upgradient marsh.

Funding Needs: The City of Quincy was awarded a 2001 GROWetlands Grant for \$6,300 to help investigate and design this possible 2-acre salt marsh restoration project. Additional funding may be required for permitting and construction.

✿ Bridge Creek, Barnstable

Sponsor: Barnstable Conservation Commission

Project Description: This salt marsh restoration project in the Barnstable Harbor Area of Critical Environmental Concern may occur in two phases. Phase 1 will include the removal and replacement of an undersized culvert in a railroad crossing of the marsh at Bridge Creek, seaward of Route 6A, with a larger culvert sized to increase tidal flows to the marsh while protecting adjacent properties. Phase 1 will be constructed in March 2003. A possible Phase 2 of this project will include the replacement of the undersized culvert beneath Route 6A. This project will restore regular tidal flows to up to 50 acres of salt marsh.

Funding Needs: MWRP has hired a contractor to design and prepare permit and construction plans for Phase 1 of this project. **Earth Tech**, a CWRP partner, will provide permitting and monitoring services. Approximately \$350,000 will be required to construct Phase 1 of this project.

✿ Mary Chase Marsh, Eastham

Sponsor: Eastham Conservation Commission

Project Description: This project consists of removing portions of a stonewall that crosses Mary Chase Marsh and the Abelino Creek channel. This stonewall restricts regular tidal flows from reaching the 10-acre upgradient salt marsh.

Funding Needs: MWRP hired a contractor to design and permit this project. The National Fish and Wildlife Foundation awarded \$10,000 to this project for construction purposes. This total is expected to cover the entire construction cost. No additional funding needs are anticipated at this time.

✿ South Cape Beach, Mashpee

Sponsor: Department of Environmental Management

Project Description: Two road crossings of the salt marsh restrict regular tidal flows from entering the upgradient salt marsh and coastal pond (a total of 25-plus acres). This project will likely include the removal of the tidal restrictions and / or the alteration of the creek channels to increase the volume of tidal flows entering the upgradient marsh and pond.

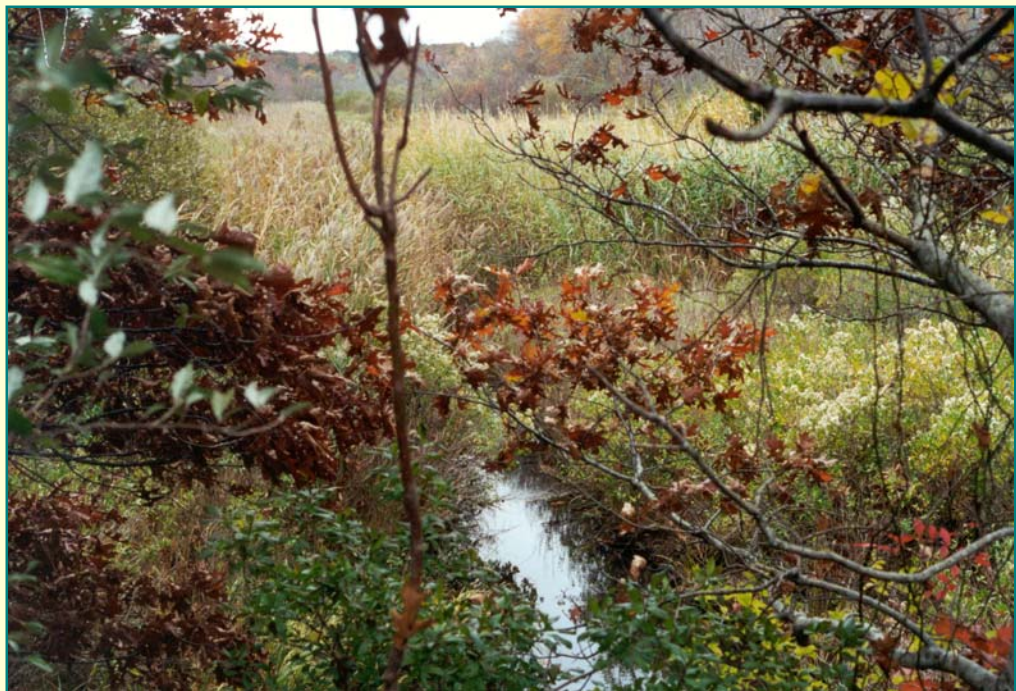
Funding Needs: MWRP hired a contractor to design this wetland restoration project. Additional funding needs include funding for permitting services (up to \$20,000) and construction (cost unknown at this time).

✿ Namskaket Creek, Brewster/Orleans

Sponsor: Cape Cod Conservation District, Department of Environmental Management

Project Description: An undersized culvert conveys Namskaket Creek beneath the Cape Cod Rail Trail at the Brewster/Orleans town line. This project consists of replacing the undersized culvert with two 60-inch diameter culverts that will restore more normal tidal flows to the severely degraded 10-acre salt marsh.

Funding Needs: MWRP hired a contractor to design this wetland restoration project. **Vanasse Hangen Brustlin, Inc.** is contributing permitting services through CWRP. This project was awarded \$45,000 through a US Fish & Wildlife Service National Coastal Wetlands Conservation grant and a CWRP donor has pledged \$9,000. Up to \$25,000 in additional funding may be needed for project construction.



Namskaket Marsh

✿ Barneyville Marsh, Swansea

(See also "**Summary of Massachusetts Wetlands Restoration Projects Completed in 2001**" for more on this project.)

Sponsor: Swansea Conservation Commission

Description: Partially filled and blocked ditches in the marsh prevented normal tidal flows from accessing the upgradient portions of the salt marsh. The Bristol County Mosquito Control Project mowed the common reed and cleaned and unblocked several of the most important ditches on the marsh. Additional monitoring at this marsh is necessary to determine if further ditch maintenance and berm breaching should be done at this site.

Funding Needs: No additional funding needs are anticipated at this time.

✿ Boat Meadow Creek, Eastham/Orleans

Sponsor: Department of Environmental Management

Description: An undersized culvert conveys Boat Meadow Creek beneath the Cape Cod Rail Trail at the Eastham/Orleans town line. This restriction has resulted in the degradation of the upgradient marsh and, due to slumping, a safety issue to the trail users. The project, to be constructed in March 2002, will replace the undersized culvert with a larger culvert.

Funding Needs: Contributions from CWRP partners **Capaccio Environmental Engineering, Massachusetts Electric,** and **Polaroid** helped close the funding gap. No additional funding needs are anticipated at this time.

✿ Quivett Creek, Dennis

Sponsor: Town of Dennis

Description: An undersized culvert beneath Sea Street restricts tidal flows from the upgradient marsh and impedes the migration of herring to an upstream spawning pond. The project consists of replacing the culvert with a larger culvert designed to restore more normal flows to the 8-acre marsh, ease fish passage beneath Sea Street, and protect adjacent low-lying properties from flooding.

Funding Needs: **The Louis Berger Group** will provide design and permitting services through CWRP. The National Fish and Wildlife Foundation awarded this project a \$15,000 grant. Up to an additional \$40,000 will be required for project construction.

✿ Oxbow National Wildlife Refuge, Harvard

Sponsor: US Fish and Wildlife Service

Project Description: A culvert installed under Route 2 has altered the hydrology of an important wetland complex that contains habitat for several rare species. This project will entail changes to the culvert in order to restore natural water levels and flow to about 20-acres of marsh.

Funding Needs: Funding is required to design and obtain permits for the proposed project. Non-federal funding is needed to match a National Fish and Wildlife Grant.

✿ Assabet National Wildlife Refuge, Maynard

Sponsor: US Fish and Wildlife Service

Project Description: A 72-acre wetland complex within a former military base has been impacted by roadways, culverts, and cranberry farming. The project goal is to restore natural hydrology and wetland communities by improving culverts and controlling invasive plant species. This project was previously identified and described by **Epsilon Associates** as a component of the *Maynard-Assabet Restoration Inventory*, one of the first Corporate Wetlands Restoration Partnership projects to be completed.

Funding Needs: Funding is required to design and obtain permits for the proposed project. Non-federal funding is needed to match a National Fish and Wildlife Grant.

2001 GROWetlands Grants Awarded

Wing's Neck, Bourne (\$19,000)

The Town of Bourne and its partners (Natural Resources Conservation Service, Wing's Neck Neighborhood Association, Bourne Conservation Commission) have designed the restoration of a 10-acre salt marsh at Wing's Neck Road. The project consists of replacing an existing undersized culvert with two culverts sized to restore full tidal flows to the marsh. The GROWetlands grant will be used to help fund project construction. Technical services to help prepare the project plan were donated by CWRP partners **Warwick & Associates** and **Doyle Engineering**.



Wings Neck salt marsh downstream of culvert

Sawmill Creek, Rockport (\$6,000)

The Town of Rockport was awarded a GROWetlands grant to help design a 3-acre salt marsh restoration project at the Saratoga Creek-Seaview Street salt marsh. Currently, an undersized culvert in Seaview Street restricts full tidal flows from entering the salt marsh. The Town will use the GROWetlands grant to conduct a field survey and to help plan and design the replacement of the existing culvert with a larger culvert sized to restore tidal flows to the salt marsh. This is the second GROWetlands grant awarded to the Town of Rockport.

Mallard Road, Quincy (\$6,300)

The City of Quincy, in collaboration with the Hough's Neck Seacoast and Salt Marsh Group, is planning to restore approximately two acres of salt marsh at Mallard Road. The City will use the GROWetlands grant to help plan the restoration, including conducting a field survey and developing a project design.

Project Investigations Conducted

Through its contractors, MWRP conducts investigations of selected sites to advance potential wetland restoration projects. Such investigations may include hydrologic studies, engineering designs, permit preparation, and surveying. Sites investigated in 2001 were:

- ✿ **Namskaket Marsh, Brewster:** MWRP contractors provided engineering design services, including the development of construction plans and specifications, for this 10-acre salt marsh restoration project.
- ✿ **South Cape Beach, Mashpee:** MWRP contractors provided engineering design services to develop and evaluate several alternatives for restoring tidal flows to this 25-plus acre salt marsh restoration project.
- ✿ **Cow Yards Marsh, Dartmouth:** MWRP hired a contractor to design this 16-acre salt marsh restoration project. This work included the preparation of construction plans and specifications.
- ✿ **Mary Chase Marsh, Eastham:** MWRP hired a contractor to design this 10-acre salt marsh restoration project and to prepare several of the required permit applications.

Coastal Restoration Plans Completed

Draft Rumney Marsh Salt Marsh Restoration Plan: In June 2001, MWRP and the Massachusetts Department of Environmental Management, Areas of Critical Environmental Concern (ACEC) Program completed the *Draft Rumney Marshes ACEC Salt Marsh Restoration Plan*. The Plan identifies lost or degraded salt marshes in Saugus, Winthrop, Revere, Boston and Lynn; documents problems with respect to flooding, water quality, and fish and wildlife habitat; and assesses the feasibility of addressing these problems by restoring salt marshes. It briefly reviews 14 restoration projects that are already underway or completed in the study area and identifies an additional 17 sites that contain approximately 200 acres of potentially restorable salt marsh.

MWRP and the ACEC Program mailed the Draft Plan to a broad group of interested parties and held a public meeting to discuss and obtain input on its findings. After incorporating suggested changes and new information obtained from public review, MWRP will finalize the Plan and distribute copies to ACEC communities, involved agencies, and other stakeholders. Once the Final Plan is complete, the ACEC Program and MWRP will stay involved to encourage, assist, and support implementation of salt marsh restoration projects.

Coastal Atlases Completed

MWRP has substantially funded, and collaborated with several partners to complete inventories of potential coastal wetland restoration sites. Studies completed in 2001 were:

- ✚ ***Final Atlas of Tidally Restricted Salt Marshes in the Buzzards Bay Watershed***, Buzzards Bay Project
- ✚ ***Final Atlas of Tidal Restrictions on the South Shore of Massachusetts***, Metropolitan Area Planning Council
- ✚ ***Draft Cape Cod Atlas of Tidally Restricted Salt Marshes***, Cape Cod Commission

The ***North Shore Atlas of Tidally Restricted Salt Marshes*** was completed in 1996.

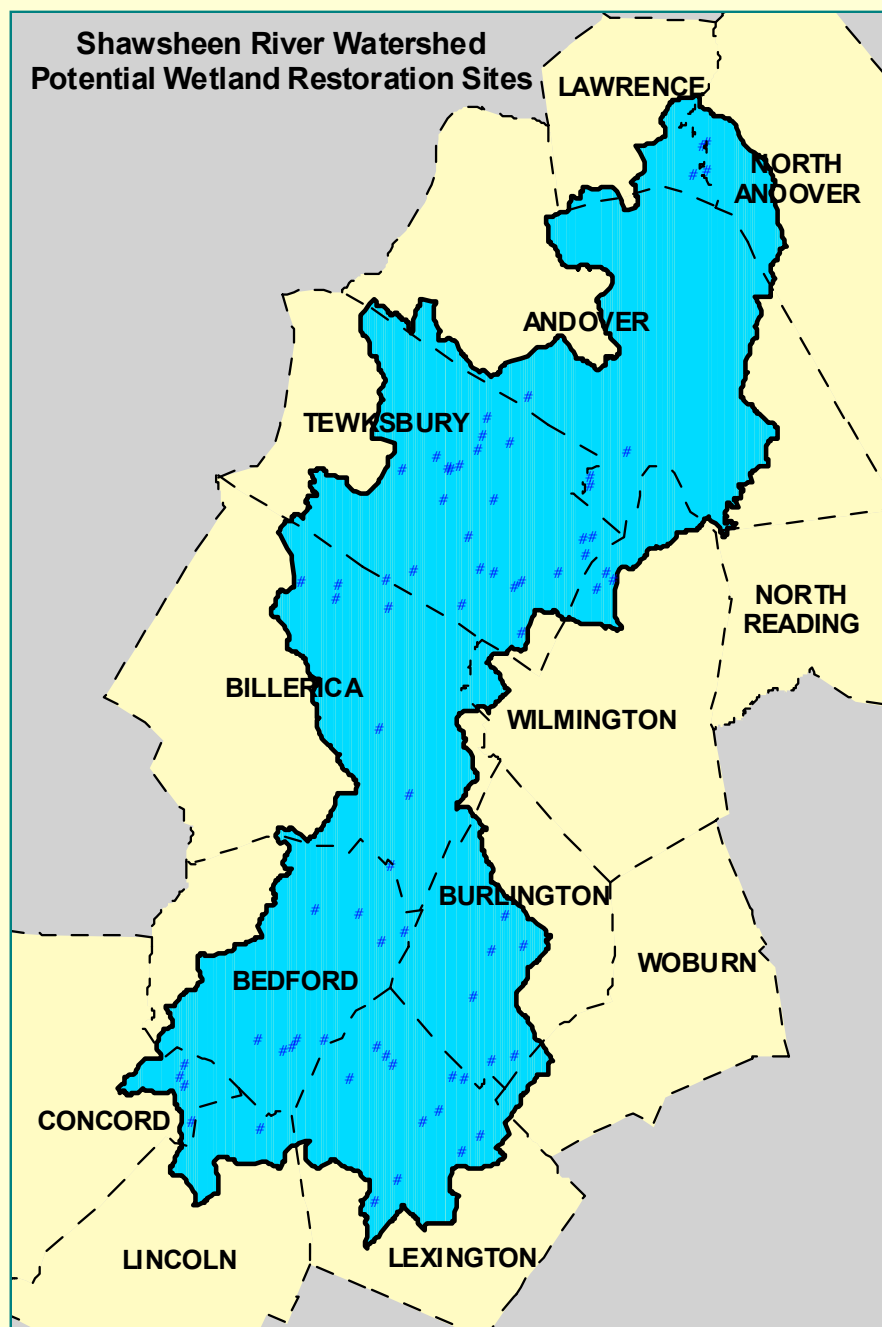
Watershed Planning Activities

Shawsheen River Watershed Wetlands Restoration Plan: The Massachusetts Wetlands Restoration Program (MWRP) continued to develop a Wetlands Restoration Plan for the Shawsheen River Watershed. In June 2001, MWRP released a Draft Plan that identified potential wetland restoration sites based on National Wetlands Inventory (NWI) data generated by a contractor. During subsequent field inspections, MWRP staff found that a majority of the sites identified are still fairly healthy wetland systems that have limited to no practical restoration potential. More importantly, they discovered that the most promising restoration sites are severely degraded and former, completely destroyed wetlands (e.g., filled & drained) - sites that the NWI-based method does not effectively identify.

MWRP has since developed a revised method to identify historically filled or otherwise severely degraded sites that now exhibit minimal to no wetland characteristics and functions. The method relies upon an analysis of various current and historical maps, aerial photos, and other data sources in a geographic information system (GIS), followed by fieldwork at each site to verify restoration opportunities. The new approach also requires that sites have practical, physical restoration actions that can be taken to significantly improve their structure and function.

Application of the new method in the Shawsheen watershed has produced initially promising results with approximately 65 sites identified as having some level of restoration potential (see watershed map of sites below). Currently, MWRP staff are investigating several of the most promising sites to collect additional information including ownership, site history, and current uses, and to explore restoration options with site owners and potential restoration project sponsors. Staff will also be meeting with conservation commissions and other key watershed groups to present findings and generate support for restoration projects.

GROWetlands Report 2001



A Final Wetlands Restoration Plan will be published in spring 2002 and will present the findings of the project including one-page detail sheets that highlight the priority potential restoration sites. MWRP will continue to pursue a few priority sites with the goal of developing them into wetland restoration demonstration projects. The Program will also continue to work with the Shawsheen Watershed Team and other key groups – including a Wetlands Restoration Work Group coordinated through the Watershed Team – to help implement the Final Restoration Plan.

New Bedford Harbor Environment Wetlands Restoration Plan: MWRP began internal program work on the New Bedford Harbor Environment Wetlands Restoration Plan by applying the revised site identification methods in the study area. When complete, the results of this analysis will be combined with other study area information to produce a Draft and Final Plan in 2002.

© Pilot Purple Loosestrife Biocontrol Project

During winter 2001, the Association of Massachusetts Wetland Scientists (AMWS), a non-profit partner of the Corporate Wetlands Restoration Partnership (CWRP), teamed up with the Massachusetts Wetlands Restoration Program (MWRP) to develop a pilot biocontrol program for Purple Loosestrife in Massachusetts. To avoid potential secondary impacts, MWRP first sought and received approval of the Secretary's Invasive Species Council, Invertebrate and Biocontrols Group.

Purple Loosestrife (*Lythrum salicaria*) is an aggressive invader of North American wetlands, lakes and rivers, often affecting the biodiversity of an area. Purple Loosestrife displaces native plants, eliminating food and shelter for wildlife and other species. While beautiful in flower, dense stands of loosestrife may impair recreational use of wetlands and rivers, impede water flow in drainage ditches and invade right-of-ways, requiring costly management efforts. Conventional means of control, such as water level management, burning, herbicides, digging and cutting are extremely difficult, costly and impractical on a large scale. The biological alternative for control of Purple Loosestrife is the introduction of natural enemies from its native range in Asia and Europe - two species of plant-feeding beetles (*Galerucella californiensis* and *G. pusilla*).

The pilot included propagation of the *Galerucella* beetles, release at appropriate sites and long-term field monitoring following the protocol developed by Berndt Blossey of Cornell University and widely used in other states. Robin Reiner, Executive Director of AMWS, provided training to 20 project volunteers in April 2001. Volunteers included wetland scientists from AMWS, entomologists from three county mosquito control programs and two schools (Diamond Middle School in Lexington and the Waring School in Beverly). Teachers were provided with a comprehensive curriculum, designed in Michigan, to educate their students about the importance of wetlands and to help them play an active part in the project as propagators and host release sites. Volunteers raised the beetles at their homes from April through July 2001.



Propagation set up

Due to time constraints, quantitative data on the young produced was based on visual observation only. Results varied widely among the host loosestrife plants. Plants yielding even a small number of young *Galerucella* (<100) resulted in a lack of flowering of the loosestrife host.

"Successful propagation" was represented by the ability to observe each life cycle stage of the *Galerucella*, a yield of thousands of young beetles per cage, and the total defoliation and die-off of the host loosestrife. Plants that appeared to host no young and presented a die-off of parent beetles became healthy, mature flowering specimens. Factors that may have affected the efficacy of the propagation include adverse weather (early frost, extreme winds and rain) and predation by earwigs, ladybugs and spiders. These predators may have been hiding on the plants prior to introduction of the cages or slipped under the sleeve encasing the plant.

GROWetlands Report 2001

Beetles were released in four sites (Acton, Beverly, Lexington and Woburn) in August 2001. Sites were chosen by MWRP in accordance with their fit to the restoration program, those presenting optimal conditions for release of the beetles, and educational value for students. A second release of beetles will likely take place at the same sites in 2002. These sites will be monitored a minimum of three years for the establishment of a self-regulating beetle population and for the effectiveness of the beetles in Purple Loosestrife control. Pending available funding, staffing, and volunteers, the program may be expanded to include additional release sites in 2002.



Volunteers digging purple loosestrife crowns for beetle propagation



Close up of Galerucella beetles being released at restoration site

Corporate Wetlands Restoration Partnership

The Corporate Wetlands Restoration Partnership provides an opportunity for individual companies to directly support wetlands restoration projects by making a contribution to one or more projects to restore wetlands and other aquatic habitats. Donors to the Massachusetts CWRP have the option of contributing money and/or in-kind technical services. Overall, the partnership has received \$311,500 in monetary donations, and \$521,204 worth of in-kind services pledged, for a total of \$832,704.

The CWRP Advisory Board is comprised of representatives from the corporate sector, federal and state environmental agencies, and non-profit organizations. In order to help recruit more partners, 4 more corporate member positions were recently added to the Board, to bring the total membership to 8 corporate, 3 governmental, and 2 non-profit representatives. To date, the Board has recommended 35 projects for CWRP support, 27 of which have one or more identified donors.

Massachusetts CWRP Partners:

Battelle
BSC Group
Cappacio Environmental Engineering
Clean Harbors
Cyn Environmental Services
*** Doyle Engineering**
Duke Energy
*** Earth Tech**
ECAP Global
*** ENSR International**
Epsilon Associates
ERM Group Foundation
ERM-New England

Genzyme
Massachusetts Electric Company
Normandeau Associates
NSTAR
Polaroid Corporation
PG&E National Energy Group
Raytheon Corporation
The Foxboro Company
*** The Louis Berger Group**
The Gillette Company
*** VHB, Inc**
*** Warwick & Associates**

*** New Partner in 2001**



November 2000: EOEa Secretary Bob Durand and Massachusetts CWRP partners receive Coastal America award from Assistant Secretary of the Army Dr. Joseph Westphal.

To be eligible for CWRP assistance, projects must be supported by the appropriate EOE program (e.g., River Restore, Anadromous Fish Restoration) on technical merit, recommended by the CWRP Advisory Board and approved by the Secretary of Environmental Affairs. As of January, 2002, forty projects had been approved for CWRP support, including three fish passage projects. In 2001, one freshwater restoration project was approved for support at the Assabet National Wildlife Refuge in Maynard. One freshwater planning project was completed in the Assabet River watershed (see description below). All other approved projects involved tidal-restrictions.

Examples of CWRP Donations Applied During 2001

✿ **Boat Meadow Creek, Eastham/Orleans**

The Cape Cod Rail Trail crosses a salt marsh bordering Boat Meadow Creek at the Eastham and Orleans town lines. Restoration involves replacing the existing 36-inch culvert with a 6-foot wide by 6-foot high box culvert. The entire area is within the Inner Cape Cod Bay Area of Critical Environmental Concern.

The landowner and primary sponsor, Massachusetts Department of Environmental Management, appealed to CWRP to supplement resources pooled from other state agencies. Other supporters and collaborators include Massachusetts Coastal Zone Management (CZM), EOE Cape Cod & the Islands Basin Team, the Towns of Eastham and Orleans, and the Massachusetts Wetland Restoration Program (MWRP). Work will begin in Spring 2002.

Corporate partners **Polaroid**, **Massachusetts Electric**, and **Capaccio Environmental Engineering** together contributed \$15,300 toward project construction.



Boat Meadow Creek Salt Marsh upstream of culvert

✿ Assabet Inventory

Epsilon Associates contributed in-kind technical services to produce the *Maynard-Assabet Wetlands Restoration Inventory*. The report identifies wetland restoration opportunities over a 20-square mile study area in three subwatersheds of the Assabet River. Examples of criteria used to prioritize sites include size of impact, presence of rare species habitat, 100-year floodplain, potential to improve habitat interconnections, as well as public education and recreation opportunities. Conceptual restoration plans were developed for the top five sites.

✿ Quivett Creek, Dennis/Brewster

An undersized culvert at Sea Street creates a tidal restriction that has likely played a role in establishment of *Phragmites* in this 8-acre marsh. Restoration will involve replacing the existing pipe with a larger culvert that will improve tidal flows and improve the ability of anadromous fish to access upstream spawning areas. **The Louis Berger Group** is donating all the services required to bring this project to implementation including obtaining existing conditions data to developing construction plans and preparing permit applications. In addition, Berger will conduct pre- and post-construction monitoring.



Berger Fisheries biologists Dan Davis (left) and Doug Hjorth seine Quivett Creek to characterize the existing fish community

Research Symposium and Proceedings

On November 29-30, 2000, MWRP sponsored a Coastal Marsh Research Symposium at the Sheraton Inn Plymouth. The purpose of the conference was to initiate a dialogue among academic researchers, wetland restoration professionals, and research funders and to begin building a research program utilizing coastal marsh restoration sites. As a result of this new collaboration, information generated by researchers would help improve restoration tools and techniques over time.



During the two-day conference, researchers presented recent studies, the capabilities of their institutions, and suggestions for research topics at coastal marsh sites. Participating institutions included Brown University, Center for Coastal Studies, Manomet Center for Conservation Services, Marine Biological Laboratory, Massachusetts Institute of Technology, National Park Service, New England Aquarium, Salem State College, University of Massachusetts Amherst, University of Massachusetts Boston, University of Massachusetts Dartmouth, and Woods Hole Oceanographic Institution. Representatives of the National Science Foundation, Environmental Protection Agency, National Oceans and Atmospheric Administration, and the Corporate Wetlands Restoration Partnership discussed funding possibilities for research projects.

A Wetlands Science Panel commented on each presentation and, at the end of the conference, led a discussion to plan for an ongoing research program. Panel members included: Dr. John Teal, Chair, Emeritus, Woods Hole Oceanographic; Dr. David Burdick, University of New Hampshire; Dr. Robert Buchsbaum, Massachusetts Audubon Society; Dr. Michele Dionne, Welles (Maine) National Estuarine Research Reserve; Dr. Brian Howes, University of Massachusetts Dartmouth; Mr. Charles Katuska, PWS, (formerly) MWRP; and Dr. John Portnoy, Cape Cod National Seashore. The Panel advised MWRP on the preparation of Symposium Proceedings. During 2001, Urban Harbors Institute assisted MWRP in developing Draft Proceedings, which summarize the meeting and map out a recommended ongoing research program. The Proceedings will be published in 2002.

Attended by over 125 people, the Coastal Marsh Research Symposium was made possible by the generous contributions of **Battelle**, **ERM - New England**, **ECAP**, **Duke Energy** and **ERM Group Foundation** through the Massachusetts Corporate Wetlands Restoration Partnership.

Outreach and Education Activities

MWRP conducts outreach activities aimed at the general public, watershed stakeholders, those generally interested in wetlands restoration (e.g., conservation commissions, land trusts) and those interested in specific restoration projects. Outreach efforts to recruit new corporate donors are conducted through the Corporate Wetlands Restoration Partnership. Additionally, MWRP provides educational materials to K-12 teachers and other educators.

Website: During 2001, MWRP developed its first website. For the first time, extensive information about wetlands restoration in Massachusetts is broadly available. The website address is: www.mass.gov/envir/mwrp.

Newsletters: MWRP publishes “Massachusetts Wetlands Restoration News” twice annually. As a cost-cutting measure, the newsletter will no longer be mailed but will be available on the MWRP website in PDF format.

During 2001, MWRP also published two newsletters to provide information to Shawsheen River watershed stakeholders about wetlands restoration planning.

Other Publications: MWRP maintains a list of available publications on its website and fills publications orders as they are received.

Video: Several years ago, with funding from Sweet Water Trust, MWRP produced a wetland restoration video titled “Restoring Our Wetlands – Healing Our Watersheds”. It is available at municipal libraries across the state.

Curriculum Material: During 2001, MWRP continued to receive numerous requests for the “Wetlands Kit for K-12 Educators” which is available to Massachusetts teachers for free.

Project-Based Education and Outreach: Restoration sites provide the best opportunities to educate the public about the benefits of bringing back our wetland heritage. In 1999 through 2000, Massachusetts Audubon Society restored salt marsh adjacent to the future site of their Joppa Flats Education Center in Newburyport. Through GROWetlands, MWRP helped obtain funding for the project. The site is heavily utilized by birders, providing significant ongoing opportunities to link restoration at the site with bird usage and other benefits.

Another example of project-based education was the pilot purple loosestrife biocontrol project conducted by MWRP during 2001 that involved a number of adult volunteers and two schools. (See pages 13 and 14 of this report.)

Restoration Site Signage and Special Events

Site-specific events provide an opportunity to reach a range of people and actively engage them at restoration sites.

Meadow Brook Park, Arlington – June 2, 2001

Approximately thirty volunteers of all ages got their feet wet and shoes muddy as they helped restore a local wetland near Mt. Pleasant Cemetery. Volunteers came prepared for planting carrying garden tools, rakes and shovels, while Assistant Secretary of Environmental Affairs Sharon McGregor was equipped with a check representing a state GROWetlands Grant awarded to the Town of Arlington for the restoration of the Meadow Brook Park wetland.



Volunteers replanting restored area at Meadow Brook Park



GROWetlands sign at Meadow Brook Park

Fisherman's Bend, Winthrop – November 2000

The Town of Winthrop, with guidance and support from MWRP, organized a marsh cleanup involving dozens of local citizens, the majority of who live in the vicinity of the marsh. Over 120 cubic yards of rubbish and debris and 70 tires were removed from the marsh.



GROWetlands sign at Fisherman's Bend



Site Clean Up at Fisherman's Bend